



# solidpartners provensolutions

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PAC Authorized Representatives are also located in most countries worldwide. For more information visit [www.pacpl.com](http://www.pacpl.com)

## PAC IMPROVES PRODUCTION THROUGH REAL-TIME PROCESS OPTIMIZATION AND CONTROL

PAC has achieved global recognition over the years with its advanced laboratory analysis equipment and technologies, which provide reliable and accurate results with high levels of automation. Today, PAC is bringing these proven methodologies to the area of process analytics. Even though lab and process are essentially two different worlds, these technologies are transferable within the plant.

Primary process applications include nitrogen for catalyst protection and online sulfur. Overall customer benefits when using process instrumentation include:

- Increased speed and accuracy due to the real-time nature of the analysis rather than sampling and lab testing
- Decreased cost of ownership versus lab
- Increased productivity due to less interruption of production, sampling, or process anomalies
- Improved distillation analysis for blending operations

Process analytics allow the customer greater control over the process since there is less time between sampling; typical lab analysis is only run up to 4 times a day, while, for example, analysis within the process could be completed every 30 minutes. Process optimization and production control are significantly improved.

## FULL RANGE OF ONLINE SOLUTIONS

PAC offers a full range of on-line instruments for distillation, sulfur/nitrogen, viscosity, flash point, and Reid vapour pressure (RVP) analyses by recognized PAC brands Antek, ISL, PSPI, and Cambridge Viscosity. These brands have long histories of providing innovative, highly dependable, and exceptionally accurate instrumentation.

PAC's on-line analytical instrumentation provides highly accurate results with little operator interaction due to their high level of automation. This results in significant improvements with process optimization and production control.

Full Range of Analyzers for Real-time Process  
Optimization and Control



**PAC**

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# PAC On-line Solutions



Full Range of Analyzers for Real-time Process Optimization and Control

- Distillation •
- Sulfur/Nitrogen •
- Reid Vapour Pressure (RVP) •
- Viscosity •
- Flash Point •

## PSPI FLASH POINT

Flash Point Range	10° to 121°C (50° to 250°F) For other ranges, please consult the PAC factory
Method	Correlates to: ASTM D56, ASTM D93, DIN EN ISO 2719, IP 34, DIN 51755, DIN EN ISO 13736, IP 170

- Performance not affected by sulfur presence
- Handles samples with viscosities up to 220 cSt (1000 SSU) at 38°C (100°F)
- Analyzer software configuration can be modified without opening the explosion-proof enclosure
- Variety of signal outputs available



Flashpoint

## PSPI VAPOR PRESSURE

RVP Range	1 to 22 psi
Method	Correlates to: ASTM D323, ASTM D4953, ASTM D5191, ASTM D6378, EN 12, EN 13016, IP 69, IP 394, IP 402, IP 481, ISO 3007

- Fast Analysis with ultrasonic sample throughput
- Excellent Repeatability of  $\pm 0.05$  psi
- Integral heating/cooling system
- No need for auxiliary air conditioning or coolant systems
- Monitor automatically returns sample to process stream



RVP 44800

## ANTEK 6200, 6000 SERIES

Measurement	250 ppb (lower detection limit) to % levels
Method	Sulfur: 6200, 6000 S and SN D5453, D6667; Nitrogen: 6200, 6000 N and SN D4629, DIN#38409, TEIL 2

- Fast, precise measurement of liquid, LPG, and gas samples
- 1 minute, high speed version available for sulfur analysis in pipeline applications where response time is critical
- Total sulfur, total bound nitrogen, or both
- Sensitivity from 250 ppb to % levels
- Excellent reproducibility and linearity
- Fast cycle time: 2.5 to 5 minutes per stream, programmable



6200



MicroDist

### ISL PHYSICAL DISTILLATION - MICRODIST

Range	Full distillation curve 20-400 °C (68-752°F)
Method	Direct correlation to: - ASTM D86 - ASTM D7345 - IP 123

- Full distillation curve in less than 10 minutes
- Auto-regeneration of the cell minimizes maintenance; no flask removal required
- Excellent Performance:
  - Repeatability +/- 1.5 °C
  - Accuracy: equal or better than ASTM D86, D7345
- Multi Stream Capability



VISCOpro 1600

VISCOpro 8000

VISCOpro 2000

### CAMBRIDGE VISCOSITY

	VISCOpro 1600	VISCOpro 2000	VISCOpro 8000
	Digital ViscoMeter as standalone monitor or a core component of a viscosity measurement system	Viscometer Controller for single-channel control needs, offering 13 measurement ranges and memory control for up to 40 fluid settings	Viscometer Multi-channel Controller, measures and controls multiple fluid applications in a single production line
Viscosity Range	0.2-20,000cP (0.2-2cP, 0.25-5cP, 0.5-10cP, 1-20cP, 2.5-50cP, 5-100cP, 10-200cP, 25-500cP, 50-1,000cP, 100-2,000cP, 250-5,000cP, 500-10,000cP, 1,000-20,000cP)		
Analysis Performance	Repeatability 0.8% Accuracy ± 1.0% of full scale (correlates to ASTM D445)		



NEC 44860

### PSPI VISCOSITY

	NEC Viscometer (44860)	Zone 1 Viscometer (44865)
Viscosity Range	Continuous measurement of the viscosity of new tonian fluids from 2 to 4000 Centipoise	
Bath Temperature	38°C to 135°C (100°F to 275°F)	